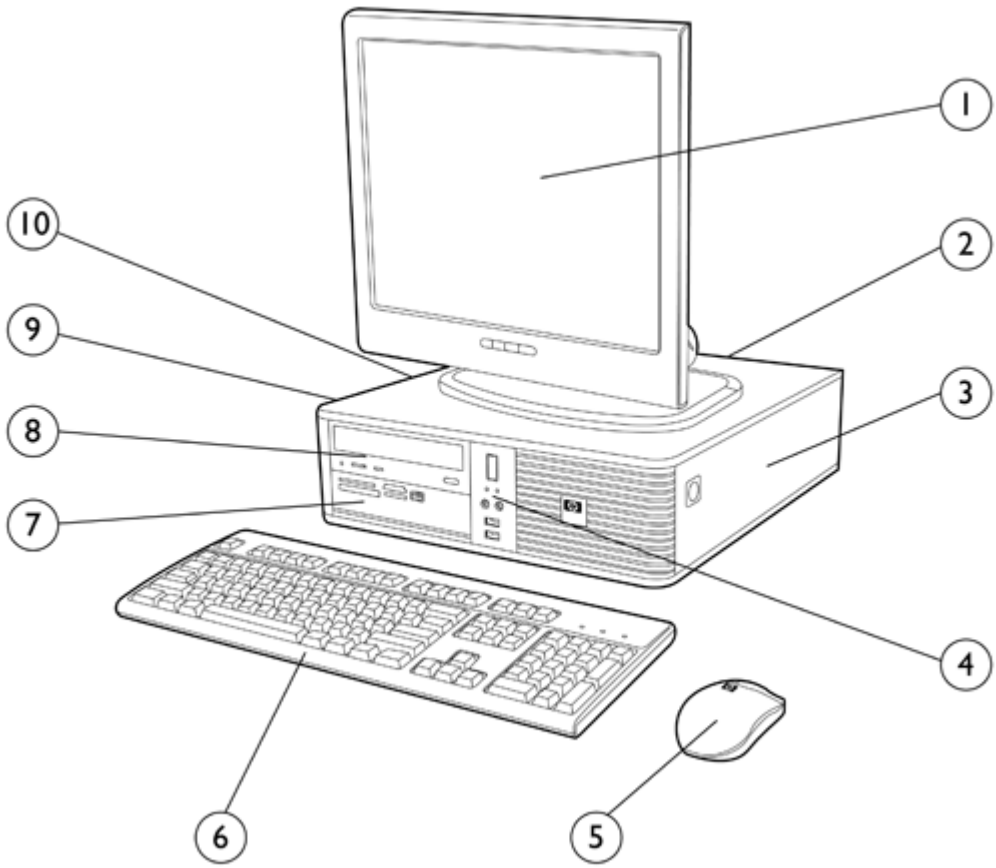
Overview

HP recommends
Windows Vista® Business



1. Monitor (sold separately)
2. Rear I/O: (6) USB 2.0, (1) standard serial port*, (1) optional serial port*, (1) parallel port*, (2) PS/2, (1) RJ-45, (1) VGA*, (1) audio in*, (1) audio out
3. (1) low profile PCI slot*, (2) low profile PCI Express x1 slot, (1) low profile PCI Express x16 slot;
4. Front I/O: (2) USB 2.0, headphone and microphone*
5. 2-Button Optical Scroll Mouse (USB)
6. HP Standard Keyboard (USB)
7. Replaced with filler panel
8. Replaced with filler panel
9. (1) Disk-On-Memory
10. 240-watt high efficiency 80 PLUS® Active Power Factor Correction (PFC) power supply

NOTE *: Currently not supported by embedded OS

HP dc73 Blade Workstation Client is available as a single, factory pre-configured model only. Vacant bays and slots found internally in the systems are not supported for use with the preinstalled embedded operating system.

At A Glance

- Designed for long-term, networked deployment within medium and large organizations in commercial business, finance and public sector organizations
- Created using industry leading Design for Environment standards. Recyclable and energy efficient.
- Comes standard with 80% efficient power supplies
- Support for new Intel technologies introduced in 2007: Intel® Q35 Express chipset, Intel Pentium Dual-Core™ Processor
- Value-added software
  - HP Blade Workstation Client Embedded Linux
  - HP Remote Graphics Software receiver
  - Altiris Deployment Solution Agent
  - HP Session Allocation Manager connection client
- HP BIOS for better security, manageability and software image stability
- Protected by HP Services, including standard warranties up to 3-3-3 (terms and conditions vary by country; certain restrictions and exclusions apply)
- Tool-less serviceability features for easier upgrades and repairs

Standard Features

Operating System	Preinstalled	HP Blade Workstation Client embedded OS (Linux)
Value-added Software		HP Remote Graphics Software Receiver HP Session Allocation Manager Connection Client Altiris Deployment Solution Agent
Service and Support		On-site Warranty and Service[1]: This three-year (3-3-3), limited warranty and service offering delivers three years of parts, labor and on-site repair. Response time is next business-day[2] and includes free telephone support[3] 24 x 7. Global coverage[2] ensures that any product purchased in one country and transferred to another non-restricted country will remain fully covered under the original warranty and service offering. Some countries/regions do not offer one year onsite and labor. [1] Terms and conditions may vary by country. Certain restrictions and exclusions apply. [2] On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country. [3] Technical telephone support applies only to HP-configured, HP and HP-qualified, third-party hardware and software. Toll-free calling and 24 x 7 support may not be available in some countries.

	HP dc73 Blade Workstation Client
Chassis Dimensions (H x W x D)	3.95 x 13.3 x 14.9 in (100.3 x 337.8 x 378.5 mm)
Optional Tower Stand Dimensions (H x W x D)	1.05 x 6.95 x 7.83 in (26.75 x 176.46 x 198.87 mm)
System weight	18.75 lb (8.50 kg)
System volume	13 liters
Shipping weight	26.10 lb (11.86 kg)
Maximum supported weight (desktop orientation)	77.1 lb (35 kg)
Shipping box dimensions (H x W x D)	9.00 x 19.68 x 23.38 in (228.6 x 499.9 x 593.85 mm)
80% Efficient Power Supply	240W 80 PLUS power supply – Active PFC
Ports	
USB 2.0	8 (2 front, 6 rear)
Serial	1 standard with 2nd optional (Currently not supported by embedded OS)
Parallel	1 (Currently not supported by embedded OS)
PS/2	1 keyboard, 1 mouse
Video	analog for integrated graphics (Currently not supported by embedded OS)
DVI output	available via optional graphics cards
Support for Multi-Monitor	available via optional graphics cards
Audio	Front – mic and headphone Rear – input (supports microphone or line input), line out
NIC (RJ-45)	Integrated Intel 82566DM Gigabit Network Connection Ethernet

Standard Features

Chipset	Intel Q35 Express chipset
Processor and Speed*	**Intel Pentium dual-core Processors:** Intel Pentium E2160* Processor (1.8-GHz, 1-MB L2 cache, 800-MHz FSB)

* Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families.

Memory

DDR2 SYNCH DRAM NON-ECC MEMORY
non-ECC DDR2 PC2-5300 (667-MHz) memory

CAUTION: You must shut down the computer and disconnect the power cord before adding or removing memory modules. Regardless of the power-on state, voltage is always supplied to the memory modules as long as the computer is plugged in to an active AC outlet. Adding or removing memory modules while voltage is present may cause irreparable damage to the memory modules or system board.

SO-DIMM Size	Slot	
	Channel A	Channel B
	1 (black)	2 (white)
512-MB	512-MB	

* The Intel Q35 Express chipset includes a built-in Management Engine (ME), which allocates memory for manageability functions. Management Engine memory is shared with system memory. If the PC contains a single SO-DIMM, 16 MB of memory is pre-allocated for it at system startup. If the PC contains two SO-DIMMs, 32 MB of memory is pre-allocated. This memory is not made available to the operating system, just as pre-allocated video memory is not available.

Memory Configuration 512-MB DDR2 Synch Dram PC2-5300 (667-MHz) Non ECC (1 x 512)
* HP dc73 Blade Workstation Client use DIMM modules.

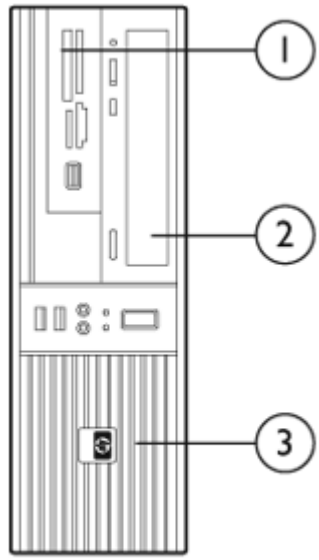
Expandability	HP dc73 Blade Workstation Client
PCI slots	1 low-profile (2.5"), length (6.6") standard; 2 full-height (4.2"), length (6.875") via optional riser card. NOTE: With riser card option, PCIe x1 and PCIe x16 slots are not accessible.
Max power per slot	25W
PCI Express x16 slot	1 low-profile (2.5"), length (6.6") (Occupied by graphics card)
Max power per slot	25W
PCI Express x1 slot	2 low profile (2.5"), length (6.6") (Occupied by graphics card)
Max power per slot	10W
External 3.5" Bays	1
External 5.25" Bays	1 (length 8.189")
Internal 2.5" HDD Bays	0
Internal 3.5" HDD Bays	1

Standard Features

Hard Drive Controller (PCI) Supported	Serial ATA (support for SATA 1.5-Gb/s and 3.0-Gb/s hard drives)
Hard Drive and Optical SATA Interfaces Supported	3 Serial ATA interfaces

NOTE: Hardware expansion capability shown for reference only and is currently not supported with the embedded Linux operating system.

HP dc73 Blade Workstation Client



Storage – Drive Support

	Disk-On-Memory
Quantity Supported	1
Position Supported	3
Controller	SATA

NIC	Intel 82566DM Gigabit Network Connection (integrated on system board)
Graphics	NVIDIA NVS 290M 256MB dual head graphics adapter (PCIe x16) NVIDIA NVS 290M 256MB dual head graphics adapter (PCIe x1) Note: Supports up to total of 4 monitors.

Standard Features

Audio	Integrated High Definition audio with ADI1884 codec (all ports are stereo) Microphone and Headphone front ports Line-out and Line-In rear ports* Multistreaming capable* Internal Speaker * Rear audio input ports are re-taskable as Line-in or Microphone-in. External speakers must be powered externally. Multistreaming can be enabled in the ADI control panel to allow independent audio streams to be sent to/from the front and rear jacks. This allows for different audio applications to use separate audio ports on the system. For example, the front jacks could be used with a headset for a communications application while the rear jacks are being used with external speakers and a multimedia application.
Input Devices	Keyboard HP USB Standard Keyboard Mouse HP USB 2-Button Optical Scroll Mouse
Miscellaneous	Tower stand

Models (factory preconfigured)

HP dc73 Blade Workstation Client KD109AW#XXX	OS	HP Blade Workstation Client Embedded OS
	Base unit	HP dc73 Blade Workstation Client base unit
	Localization kit	HP Blade Workstation Client country kit
	Processor	Intel Pentium Dual-Core E2160 Processor (1.80-GHz, 1MB L2 cache, 800-MHz FSB)
	Memory	512-MB DDR2 Synch Dram PC2-5300 (667-MHz) Non ECC (1 x 512)
	Hard Drive	None
	Flash card	512MB SATA Flash Disk-On-Memory (DOM)
	Controller	NA
	Optical Drive	None
	Graphics 1	NVIDIA Quadro NVS 290 (256MB dual-head) PCIe x16
	Graphics 2	NVIDIA Quadro NVS 290 (256MB dual-head) PCIe x1
	Floppy Drive	NA
	Keyboard	HP USB standard keyboard
	Mouse	HP USB optical scroll mouse
	Application software	HP Remote Graphics Software ver.4 & ver.5 (Receiver) HP Session Allocation Manager connection client Altiris Deployment Solution Agent

Country Code Key			
Australia	#ABG	Korea	#AB1
Belgium	#AK6	LA Spanish	#ABM
Brazil	#AC4	Netherlands	#ABH
China	#AB2	Norway	#ABN
Denmark	#ABY	Portugal	#AB9
Europe-wide	#ABB	Singapore Malaysia	#AB4
Finland	#ABX	Spain	#ABE
France	#ABF	Sweden	#ABS
French Canadian	#ABC	Switzerland (multilingual)	#UUZ
Germany	#ABD	Taiwan	#AB0
Italy	#ABZ	Turkey	#AB8
Japan	#ABJ	UK	#ABU
Japan (English)	#ACF	US	#ABA

After-Market Options (availability may vary by region)

Input/Output Devices	Keyboards	After-Market Options Part Number
	HP PS/2 Standard Keyboard	DT527A
	HP USB Standard Keyboard	DT528A
	HP USB Gray Keyboard	DT529A
	Pointing Devices	
	HP PS/2 2-Button Optical Scroll Mouse	EY703AA
	HP USB 2-Button Optical Scroll Mouse	DC172B
Monitors	TFTs	
	HP L1506 15 TFT Flat Panel Monitor – Analog only	PX848AA#ABA
	HP L1706 17 TFT Flat Panel Monitor – Analog only	PX849AA#ABA
	HP L1740 17 LCD Flat Panel Display – Analog/Digital	PL766AA#ABA
	HP L1745 17 TFT Flat Panel Display – Analog/Digital	GE178AA#ABA
	HP L1906 19 TFT Flat Panel Display – Analog only	PX850AA#ABA
	HP L1940T 19 TFT Flat Panel Display – Analog/Digital	EM869AA#ABA
	HP LP1965 19 TFT Flat Panel Display – Analog/Digital	RA373AA#ABA
	HP L2045w TFT Flat Panel Display – Analog/Digital	RD125AA#ABA
	HP L2065 20 TFT Flat Panel Display - Analog/Digital	EF227A4#ABA
	HP LP2465 24 TFT Widescreen Flat Panel Display – Analog/Digital	EF224A4#ABA
	HP w19 Wide LCD Display – Analog/Digital	EM885AA#ABA
	CRTs	
	HP s7540 17 (16.0 vis) CRT Monitor	PF997AA#ABA
Multimedia	HP USB Powered Speakers	RD628AA
Security	Kensington Lock	PC766A
	HP Business PC Security Lock	PV606AA
	HP Solenoid Lock/Hood Sensor	GJ116AA
Brackets/Stands	HP 2007 SFF Tower Stand	GJ118AA
Monitor Cable	HP DMS-59 to Dual-VGA cable	GS567AA

Unit Environment and Operating Conditions	HP dc73 Blade Workstation Client
General Unit Operating Guidelines • Keep the computer away from excessive moisture, direct moisture and the extremes of heat and cold, to ensure that unit is operated within the specified operating range. • Leave a 10.2 cm (4 in) clearance on all vented sides of the computer to permit the required airflow. • Never restrict airflow into the computer by blocking any vents or air intakes. • Do not stack computers on top of each other or place computers so near each other that they are subject to each other's re-circulated or preheated air. • Occasionally clean the air vents on the front, back, and any other vented side of the computer. Lint, dust and other foreign matter can block the vents and limit the airflow. • If the computer is to be operated within a separate enclosure, intake and exhaust ventilation must be provided on the enclosure, and the same operating guidelines listed above will still apply.	
Temperature Range	Operating: 50° to 95° F (10° to 35° C)* Non-operating: -22° to 140° F(-30° to 60° C)
Relative Humidity	Operating: 10% to 90% (non-condensing at ambient) Non-operating: 5% to 95% (non-condensing at ambient)
Maximum Altitude (unpressurized)	Operating: 10,000 ft (3048 m) Non-operating: 30,000 ft (9144 m)
* Operating temperature is de-rated 1.0 deg C per 300 m (1000 ft) to 3000 m (10,000 ft) above sea level, no direct sustained sunlight. Maximum rate of change is 10 deg C/Hr. The upper limit may be limited by the type and number of options installed.	

Power Supply	Small Form Factor
Power Supply	240 watt custom power supply – Active PFC
Operating Voltage Range	90 – 264 VAC
Rated Voltage Range	100 – 240 VAC
Rated Line Frequency	50/60 Hz
Operating Line Frequency Range	47 – 63 Hz
Rated Input Current	4A
Rated Input Current with 80% Efficient Power Supply	3.5A
Current Leakage (NFPA 99)	< 275 µA
System Heat Dissipation	Typical 198 btu/hr (50 kg-cal/hr) Maximum 1260 btu/hr (318 kg-cal/hr
System Heat Dissipation with 80% Efficient Power Supply	Typical 150 btu/hr (38 kg-cal/hr) Maximum 1024 btu/hr (258 kg-cal/hr)
Power Supply Fan	80mm variable speed

Technical Specifications

ROM BIOS Information
Key features of the HP BIOS in the HP dc73 Blade Workstation Client include: • Deployment and manageability – HP BIOS provides technologies that help integrate the HP Business desktop computer into the enterprise, such as PXE and F10 Setup support for 12 languages. • Stability – HP BIOS supports the HP stable product roadmap by releasing only critical BIOS changes to the factory and advanced change notification. • Thermal and power management – The HP BIOS provides and enables thermal and power management technologies so component temperatures are managed for high reliability and to assist in operating the HP Business Desktop computer in any enterprise environment. • Acoustic performance – Industry leading acoustic emissions across the range of operating conditions. • Serviceability – HP BIOS provides diagnostic and detailed service information. Additional HP BIOS Features • Power-On password – Helps prevent an unauthorized user from powering on the system. • Administrator password – Also known as the setup password, this helps prevent unauthorized changes to the system configuration. If the administrator password is not known, the BIOS version cannot be changed and changes cannot be made to BIOS settings using F10 setup or under the OS.

Serviceability Features of System		
Dual Color Power LED on Front of Computer (Indicates Normal Operations and Fault Conditions)		
Diagnostic LED Explanation Table	Number of 1-second red LED blinks followed by 2-second pause, then repeats: 2-processor thermal protection activated 3-processor not installed 4-power supply failure 5-memory error 6-video error 7-PCA failure (ROM detected failure prior to video) 8-invalid ROM, bootblock recover mode	
• System/Emergency ROM	• Flash ROM	• CMOS Battery Holder for easy Replacement
• 5 Aux Power LED on System PCA	• Processor ZIF Socket for easy Upgrade	• Clear Password Jumper
• DIMM Connectors for easy Upgrade	• Clear CMOS Button	• NIC LEDs (integrated) (Green & Amber)
• Dual Color Power and HD LED - To Indicate Normal Operations and Fault Conditions	• Color coordinated cables and connectors	• Tool-less Hood Removal

Serviceability Features of Chassis		
• Front power switch	• Green Pull Tabs, and Quick Release Latches for easy Identification	
Additional Features	Description	
Tower	Product can be oriented as a tower (in addition to desktop orientation)	

Technical Specifications - Audio

High Definition Audio	Type	Integrated
	High Definition Stereo Codec	Yes – ADI 4-channel ADI 1884 codec
	Audio Jacks	Front microphone-In (150-K ohm Input Impedance) Rear Line-In/Microphone input (150-K ohm Input Impedance, function is configurable by audio driver) Rear Line-Out * (190 ohms Output Impedance, expects at least a 10-K ohm load) Front Headphone-Out (0.5 Ohm Output Impedance, expects at least a 32 ohm load)
	* Internal Speaker Amplifier is for Internal Speaker only. External Speakers need to be powered externally. Rear Line in audio port is re-taskable as Line-in or Microphone-in.	
	Multistreaming Capable	Multistreaming can be enabled in the ADI control panel to allow independent audio streams to be sent to/from the front and rear jacks.
	Sampling	8 kHz – 192 kHz
	Wavetable Syntheses (software)	Yes – Uses OS soft wavetable
	Analog Audio	Yes
	Number of Channels on Line-Out (mono/stereo)	Stereo (Left & Right channels)
	Internal Audio Speaker Power Rating	1.5 W
	Internal Speaker	Yes
	External Speaker Jack (Line-Out)	Yes

Technical Specifications - Communications

Integrated Intel 82566DM Gigabit Network Connection	Connector		RJ-45
	Controller		Intel Nineveh Gigabit platform LAN Connect Networking Controller
	Memory		Integrated 96KbB on chip buffer memory
	Data rates supported		10/100/1000 Mbps
	Compliance		IEEE 802.1P, 802.1Q, 802.2, 802.3, 802.3 ab and 802.3u compliant,
	Bus architecture		GLCI, LCI interface. Intel specific MAC to PHY interface
	Data transfer mode		At gigabit GLCI (802.3 serdes) is for Data, LCI (parallel bus)for MDIO, at 10/100 LCI for both data and MDIO, GLCI is idle.
	Hardware certifications		FCC, B, CE, TUV- cTUVus Mark Canada and United States, TUV- GS Mark for European Union
	Power requirement		Require 3.3Vaux,1.8V and 1.0V or just 3.3V with integrated regulators Power consumption 1.16 Watts for 82566, whole LOM 2.53 Watts
	ACBS		Intel Auto Connect Battery Saving feature
	Boot ROM support		Yes
	Network transfer mode		Full-duplex
			Half-duplex (not available for the 1000BASE-T transceiver)
	Network transfer rate		10BASE-T (half-duplex) 10 Mbps
			10BASE-T (full-duplex) 20 Mbps
			100BASE-TX (half-duplex) 100 Mbps
			100BASE-TX (full-duplex) 200 Mbps
			1000BASE-T (full-duplex) 2000 Mbps
	Environmental	Operating temperature	32° to 131°F (0° to 55° C) To 70° C for external regulator
		Operating humidity	85% at 131° F (55° C)
	Management capabilities		WOL, auto MDI crossover, PXE, Muti-port teaming, RSS, Advanced cable diagnostic.

NVIDIA Quadro NVS 290 256MB PCIe Dual Head	Form Factor	Low Profile
	Bus Type	PCIe x16
	Memory	256 MB 400MHz DDR2 SDRAM unified frame buffer, Z-buffer and Texture storage
	Connector	DMS-59, includes DMS-59 to Dual DVI-I cable. DMS-59 to Dual VGA cable available as an option.
	Display resolution support	Dual integrated analog display controllers supporting up to two analog displays at 2048x1536 @ 85Hz on both displays or dual digital displays at 1920x1200 (single-link).
	RAMDAC	Integrated dual 400MHz
	Color planes	32-bit color buffer
	Overlay planes	Hardware supported
	Multi-Monitor support	Dual monitor support
	DVI support	DMS-59 (to dual DVI-SL)
	NOTE: Available resolution is also dependent on the attached monitor resolution and may differ.	

NVIDIA Quadro NVS 290 256MB PCIe Dual Head	Form Factor	Low Profile
	Bus Type	PCIe x1
	Memory	256 MB 400MHz DDR2 SDRAM unified frame buffer, Z-buffer and Texture storage
	Connector	DMS-59, includes DMS-59 to Dual DVI-I cable. DMS-59 to Dual VGA cable available as an option.
	Display resolution support	Dual integrated analog display controllers supporting up to two analog displays at 2048x1536 @ 85Hz on both displays or dual digital displays at 1920x1200 (single-link).
	RAMDAC	Integrated dual 400MHz
	Color planes	32-bit color buffer
	Overlay planes	Hardware supported
	Multi-Monitor support	Dual monitor support
	DVI support	DMS-59 (to dual DVI-SL)
	NOTE: Available resolution is also dependent on the attached monitor resolution and may differ.	

Technical Specifications - Input/Output Devices

USB Standard Keyboard	Physical characteristics	Keys	104, 105, 106, 107, 109 layout (depending upon country)
		Dimensions (L x W x H)	18.0 x 6.4 x 0.98 in (45.8 x 16.3 x 2.5 cm)
		Weight	2 lb (0.9 kg) minimum
	Electrical	Operating voltage	+ 5VDC ± 5%
		Power consumption	50-mA maximum (with three LEDs ON)
		System interface	USB Type A plug connector
		ESD	CE level 4, 15-kV air discharge
		EMI – RFI	Conforms to FCC rules for a Class B computing device
		Microsoft® PC 99 – 2001	Functionally compliant
	Mechanical	Languages	38 available
		Keycaps	Low-profile design
		Switch actuation	55-g nominal peak force with tactile feedback
		Switch life	20 million keystrokes (using Hasco modified tester)
		Switch type	Contamination-resistant switch membrane
		Key-leveling mechanisms	For all double-wide and greater-length keys
		Cable length	6 ft (1.8 m)
		Microsoft PC 99 – 2001	Mechanically compliant
		Acoustics	43-dBA maximum sound pressure level
	Environmental	Operating temperature	50° to 122° F (10° to 50° C)
		Non-operating temperature	-22° to 140° F (-30° to 60° C)
		Operating humidity	10% to 90% (non-condensing at ambient)
		Non-operating humidity	20% to 80% (non-condensing at ambient)
		Operating shock	40 g, six surfaces
		Non-operating shock	80 g, six surfaces
		Operating vibration	2-g peak acceleration
		Non-operating vibration	4-g peak acceleration
		Drop (out of box)	26 in (66 cm) on carpet, six-drop sequence
		Drop (in box)	42 in (107 cm) on concrete, 16-drop sequence
	Approvals	UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick, MIC	
	Ergonomic compliance	ANSI HFS 100, ISO 9241-4, and TUVGS	
	Kit contents	Keyboard, installation guide, warranty card, safety and comfort guide	

Technical Specifications - Input/Output Devices

HP USB Gray Keyboard	Physical characteristics	Keys	104, 105, 106, 107, 109 layout (depending upon country)
		Dimensions (L x W x H)	18.0 x 6.4 x 0.98 in (45.8 x 16.3 x 2. 5 cm)
		Weight	2 lb (0.9 kg) minimum
	Electrical	Operating voltage	+ 5VDC ± 5%
		Power consumption	50-mA maximum (with three LEDs ON)
		System interface	USB Type A plug connector
		ESD	CE level 4, 15-kV air discharge
		EMI – RFI	Conforms to FCC rules for a Class B computing device
		Microsoft PC 99 – 2001	Functionally compliant
	Mechanical	Languages	38 available
		Keycaps	Low-profile design
		Switch actuation	55-g nominal peak force with tactile feedback
		Switch life	20 million keystrokes (using Hasco modified tester)
		Switch type	Contamination-resistant switch membrane
		Key-leveling mechanisms	For all double-wide and greater-length keys
		Cable length	6 ft (1.8 m)
		Microsoft PC 99 – 2001	Mechanically compliant
		Acoustics	43-dBA maximum sound pressure level
	Environmental	Operating temperature	50° to 122° F (10° to 50° C)
		Non-operating temperature	-22° to 140° F (-30° to 60° C)
		Operating humidity	10% to 90% (non-condensing at ambient)
		Non-operating humidity	20% to 80% (non-condensing at ambient)
		Operating shock	40 g, six surfaces
		Non-operating shock	80 g, six surfaces
		Operating vibration	2-g peak acceleration
		Non-operating vibration	4-g peak acceleration
		Drop (out of box)	26 in (66 cm) on carpet, six-drop sequence
		Drop (in box)	42 in (107 cm) on concrete, 16-drop sequence
	Approvals	UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick, MIC, BG Prufzert Mark	
	Ergonomic compliance	ANSI HFS 100, ISO 9241-4, and TUVGS	
	Kit contents	Keyboard, installation guide, warranty card, safety and comfort guide	
HP USB Optical Scroll Mouse	Dimensions (H x L x W)	1.5 x 4.5 x 2.5 in (3.8 x 11.6 x 6.3 cm)	
	Weight	0.27 lb (0.12 kg)	
	Cable length	72.8 in (185 cm)	

Technical Specifications - Environmental Data

Eco-Label Certifications and declarations

This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

- US Federal Energy Management Program (FEMP)
- Taiwan Green Mark
- China Energy Conservation Program
- ECO declaration
- EPEAT Silver Rated
- Korea Eco-label
- Japan PC Green label**

** This product conforms to the examination standards (2003 version) under JEITA's 'PC Green Label System.'

HP dc73 Blade Workstation Client with 80% Efficient Power Supply

System Configuration

The configuration used for the Energy Consumption and Declared Noise Emissions data for the Small Form Factor Desktop model is based on a model with an Intel Core 2 Duo E6850 Processor, 1 GB memory and 160-GB HD.

Energy Consumption	AC Input Voltage at 115 VAC +/- 5 VAC, 60 Hz +/- 3 Hz	AC Input Voltage at 230 VAC +/- 5 VAC, 50 Hz +/- 3 Hz	AC Input Voltage at 100 VAC +/- 5 VAC, 50 Hz +/- 3 Hz
Normal Operation On-Idle (ENERGY STAR Idle (S0))	63.1 W	62 W	63.4 W
ENERGY STAR "Sleep" (S3) (Wake On LAN (WOL) Enabled)	2.36 W	2.55 W	2.34 W
ENERGY STAR "Sleep" (S3) (Wake On LAN (WOL) Disabled)	2.32 W	2.57 W	2.31 W
ENERGY STAR "Standby" (Off) (S5) (Wake On LAN (WOL) Enabled)	1.58 W	1.75 W	1.56 W
ENERGY STAR "Standby" (Off) (S5) (Wake On LAN (WOL) Disabled)	0.87 W	1.05 W	0.87 W
Heat Dissipation*	**AC Input Voltage at 115 VAC +/- 5 VAC, 60 Hz +/- 3 Hz**	**AC Input Voltage at 230 VAC +/- 5 VAC, 50 Hz +/- 3 Hz**	**AC Input Voltage at 100 VAC +/- 5 VAC, 50 Hz +/- 3 Hz**
Normal Operation On-Idle (ENERGY STAR Idle (S0))	215.297 BTU/hr	211.544 BTU/hr	216.32 BTU/hr
ENERGY STAR "Sleep" (S3) (Wake On LAN (WOL) Enabled)	8.052 BTU/hr	8.7 BTU/hr	7.984 BTU/hr

ENERGY STAR "Sleep" (S3) (Wake On LAN (WOL) Disabled)	7.915 BTU/hr	8.768 BTU/hr	7.881 BTU/hr
ENERGY STAR "Standby" (Off) (S5) (Wake On LAN (WOL) Enabled)	5.39 BTU/hr	5.971 BTU/hr	5.322 BTU/hr
ENERGY STAR "Standby" (Off) (S5) (Wake On LAN (WOL) Disabled)	2.968 BTU/hr	3.582 BTU/hr	2.968 BTU/hr

* Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

This product is in compliance with US executive order 13221, WOL (wake on LAN) disabled.

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)

System Fan Off	Sound Power (LWAd, bels)	Sound Pressure (LpAm, decibels)
Idle	3.8	29
Fixed Disk (random writes)	4.0	30

*Not for systems containing 10,000 RPM hard drives.

Longevity and Upgrading This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include:

- Intel LGA775 processor socket
- 8 USB ports
- 1 empty PCI slot
- 2 empty PCIe x1 slot
- 1 empty PCIe x16 slot
- 1 internal drive bay
- 1 SATA optical drive bay
- 1 3.5-inch external drive bay
- 4 memory slots
- 1 second Serial port (optional)

Spare parts are available throughout the warranty period and or for up to 5 years after the end of production.

Batteries This product complies with ISO standards:

- EU Directive 91/ 157/ EEC
- EU Directive 93/ 86/ EEC
- EU Directive 98/ 101/ EEC

Batteries used in the product do not contain:

- Mercury greater the 5ppm by weight
- Cadmium greater than 10ppm by weight

- Lead greater than 4000ppm by weight.

Battery size: CR2032 (coin cell)
Battery type: Lithium

Additional Information

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive – 2002/95/EC.
- This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
- This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.
- This product is in compliance with the IEEE 1680 (EPEAT) standard at the Silver level (see http://www.epeat.net)
- Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.
- This product contains 0% recycled materials (by wt.)
- This product is >91% recyclable when properly disposed of at end of life.

Packaging Materials

Corrugated Paper	1736 g
EPE Foam	293 g
LDPE Bag	36 g

- The EPE foam packaging material is made from 30 to 40% industrial recycled content.
- The corrugated paper packaging materials contain at least 25% post consumer recycled content.

HP dc73 Blade Workstation Client

RoHS Compliance

Hewlett-Packard is committed to compliance with all applicable environmental laws and regulations, including the European Union Restriction of Hazardous Substances (RoHS) Directive. HP's goal is to exceed compliance obligations by meeting the requirements of the RoHS Directive on a worldwide basis. From July 1, 2006, RoHS substances will be virtually eliminated (virtually = to levels below legal limits) for all HP electronic products subject to the RoHS Directive, except where it is widely recognized that there is no technically feasible alternative (as indicated by an exemption under the EU RoHS Directive).

Material Usage

This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Formaldehyde
- Halogenated Diphenyl Methanes
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.
- Ozone Depleting Substances

- Polybrominated Biphenyls (PBBs)
- Polybrominated Biphenyl Ethers (PBBEs)
- Polybrominated Biphenyl Oxides (PBBOs)
- Polychlorinated Biphenyl (PCB)
- Polychlorinated Terphenyls (PCT)
- Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)

Packaging

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and corrugated materials.
- Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

End-of-life Management and Recycling

Hewlett-Packard offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/recyclers. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

Hewlett-Packard Corporate Environmental Information

For more information about HP's commitment to the environment:
[link to new HP white paper now in progress]
Global Citizenship Report
http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html
Eco-label certifications
http://www.hp.com/hpinfo/globalcitizenship/environment/productdesign/ecolabels.html
ISO 14001 certificates:
http://www.hp.com/hpinfo/globalcitizenship/environment/operations/envmanagement.html

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